EDITORIAL NOTES.

In last week's number we mentioned that short directions would be given as to the best means of securing and forwarding specimens for pathological examination. We will first commence with blood.

In a suspected case of Anthrax, for example, carefully remove the spleen from the body, then cut a small slice from the centre, place in a clean mustard tin, pack carefully and forward immediately.

It must be borne in mind that in the examination of blood or material, for anthrax bacilli, that the fresher the material can be examined the better, as septic bacilli (which to an ordinary observer look very much like the anthrax bacilli, under the microscope) will predominate, and the anthrax germs disappear if left too long before examined.

In the case of milk, for tubercle bacilli, a two ounce phial is sufficient, labeling from which teat it was removed, packing carefully to avoid breakage.

In the case of Actinomycosis or Tumours from different parts, send a piece that will be packed in a 2 oz. chip box with a loose label attached for stamping, leave as far as possible some of the skin or membrane attached to the growth.

Twelve days must be allowed for specimens that require hardening before cutting sections.

Practitioners will render valuable assistance by sending as far as they can a history of the cases from which the material was sent, for publication; with their permission, it being understood that this permission is given unless otherwise stated.

A specimen will be returned to the sender if he wishes it.

All material can be sent, accompanied with a remittance of 5/- to defray ordinary working expenses, to

W. T. Wilson, Bacteriological Laboratory,
King's College, Strand.

Considering the large number of letters we have received expressing pleasure at the appearance of a weekly journal, and the very small number of literary contributions forwarded, we cannot help wondering whether it is apathy or modesty which instigates our friends. Whatever be the cause, the effect is an awkward fact. It is necessary to repeat what we said before, that unless practitioners help by sending cases and articles we cannot make our pages interesting and useful.

We publish this week under the strange title of "Whirquibus" a short article describing a disease of sheep in Shetland. It would be interesting to know if any such disorder is recognized in other parts of the Kingdom. Perhaps some of our readers might be able to say if the sheep in any part of Northern Europe suffer from a similar disease. Students of continental veterinary literature might possibly help in elucidating the question.

Great things were expected from the passing of the Veterinary Surgeons Act. So far the practitioner has not reaped much benefit from it. He may look upon it with pride as a valuable legacy to the next generation, and feel that he has earned the gratitude of posterity. He must also often feel that the Act, through its Registered-Practitioner-Clause has given an improved status to his un-diploma'd neighbour. He would be more willing to endure this present evil for future good, if he saw the Council more active and determined in preventing men not on any register from assuming titles they have no right to. It is true the Council offer to investigate any case in which absolute proof can be offered them of infringement of the Act, but there is a pretty general idea that they are too slow and too cautious in their procedure.

"Absolute proof" is difficult to obtain, and much time and trouble is wasted in attempts to obtain it. Instead of making long investigations into cases reported by practitioners, would it not be sufficient when a good *prima facie* case was established to grant permission for a prosecution, instruct a local solicitor to take action, and guarantee the aggrieved member half of his law costs. No one wishes to institute vindictive proceedings, but if the Act is to be of any value, it should be brought into play as soon as possible after the commission of any offence against its clauses. It would be interesting to know how many prosecutions have been initiated by the Council; and to compare their number, with the number of letters written and received, the legal consultations held, and the laborious sittings of special committees, endured by earnest but timid members. Would such knowledge suggest the proverb about "much cry and little wool"?

Last week we drew attention to the Congress on Tuberculosis having just commenced its sittings in Paris. We are unable in this number to give a full report of its proceedings and refrain from printing a portion with the unpopular termination—"to be continued in our next." We will only add that Professor Chauveau of the Lyons Veterinary School was elected President and that Great Britain was represented by Mr. Archibald Robinson of Greenock.

CLINICAL NOTES.

"Careful observation makes a skilful practitioner but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of Pathological Science."

WHIRQUIBUS,

By R. Levie, M.R.C.V.S., Lerwick.

The Shetland Sheep are very subject to a peculiar disorder, of which the local appellations are whirquibus, shell-sickness, oil-poke, &c.

It generally occurs in weanlings, or sheep of the first shear, and is usually seen between November of the one year and April of the following.

In all cases the indications of illness are listlessness, segregation, capricious appetite, bowels irregular, occasional nephritic colic (?) strangury. In advanced cases anæmia intervenes with localized anasarca notably of the intermaxillary space. It is this form which is named *whirquibus*—a Norske onomatopoéid—from a peculiar sound emitted by the sufferer from the unnatural pressure of the anasarcous swelling on the larynx. Ultimately ischuria sets in with uremic poisoning as a result, the animal dying in coma. These are the special indications of this disorder occurring with the modifications in individual cases. The duration is indefinite—the extremes being a few days to several weeks.

Now what is this disorder, for it can hardly be called a disease pure and simple in the logical acceptation of that word. My own opinion is that the so-called whirquibus is, to begin with, anæmia with uremia as a concomitant or sequel. It only occurs in young growing stock, in cold wet weather, and after a succession of storms. It is a well known fact that sheep cannot thrive with their skins in a perpetually saturated condition, also that the tissue metamorphoses is very active in youth It is a rule in anæmia that there is a torpidity of the secretory organs. Taking these three things into consideration—it will be easily seen how the blood may become loaded by effete matter, and its natural integrity being interfered with, anasarca and uremia occur.

The practical outcome of this is how to prevent whirquibus, and I submit:—

(1).—Use means that will ensure a ready elimination of the natural products of tissue waste by their proper channels.

(2).—Protect the animals as much as possible during storms, and use a water-proof covering for the back and loins.

(3).—Never allow them either a feast or a famine.

(4).—Give occasional doses of the liquid perchloride of iron.

These are a few remarks on a disease of of which I can find no account in any of our text books. It would please me much to hear the opinions of more experienced men in regard to it, and I shall be glad to give any further information wanted.

ŒSTRUS NASALIS—OR WHAT?

By "An Old Student."

My patient was a bay pony used for harness work in a light cart by a lady. Standing in his stall he presented nothing unusual either in appearance or manner. His appetite was good and all his functions regular. His owner complained that frequently, whilst being driven, the pony would shake his head and sometimes do it so violently and so rapidly that it was necessary to bring him to a standstill. He first did this on a long journey one very hot day in May. Thrice since he had had a violent attack. I had the pony turned round and then carefully examined the eyes, teeth and ears—took the pulse, auscultated the heart; nothing wrong with these. We next put the pony in harness and I drove him sharply up hill and down for five or six miles. He soon exhibited his peculiarity, and continued it more or less the whole journey, but never so violently as to make it advisable to slacken our pace. I have had the luck to drive more than one horse liable to megrims and the symptoms of that disease are only too familiar. This pony was altogether different—he poked his nose as though the bit annoyed him, he shook his head, he threw it first to one side and then to the other; sometimes he threw his nose in the air, sometimes he pushed it nearly down to the ground. When these tricks first commenced I got down and examined the bit—it was a smooth ring-snaffle. I hung it as loosely in the mouth as was safe, and drove on. This made no difference. The tossing about of the head was clearly a definite voluntary act, expressive of irritation. It was accompanied by a short, quick, repeated snorting or sneezing.

On returning to the stable I enquired if the sneezing had always been noticed with the head shaking, and found it had. I was also told that the pony had not been long at work—about six weeks—as he had been running at grass since last summer. There was no nasal discharge and had never been any. The pony was hog-maned and driven with a network cap over the poll and ears, under the bridle. This net was only adopted after the shaking commenced, with an idea that it would protect from flies.

Now what was the cause of these symptoms? I concluded it was some irritant in the nasal chambers or in the sinuses. Whilst driving and when respiration was most accelerated, I stopped and, with my hand, closed first one nostril and then the other to see if I could detect any obstruction—both were apparently clear. This and the absence of all nasal discharge caused me to decide that the irritant was not in the nasal chamber. Nor was it in the throat for no abnormal sounds were emitted, no cough was ever heard, and swallowing either liquids or solids was performed perfectly. I cannot believe the irritation was in the skull, I am sure it was not in the mouth, so only the sinuses remained for its location.

Remembering the precisely analogous set of symptoms I once observed in a large Russian dog, from which I afterwards obtained a fine specimen of the *pentastoma teneoides*, I concluded that most probably this pony suffered from some parasite in the sinuses, and I told my client so. My dog-patient spontaneously voided his parasite, and I expressed a hope that my pony-patient might also as satisfactorily get rid of his. The run at grass adds probability to the diagnosis, as we know that such a position in the autumn favors the admission of parasites. We know that the sheep suffers from the *œstrus nasalis*, and I find Cobbold relates two cases of this parasite in the horse. The pentastoma teneoides has also been found in the frontal sinuses of the horse, but not in this country.

It is two months since I saw the pony, but I heard a month ago he still shook his head and sneezed. Can any reader of *The Record* offer a suggestion?

SKEWER IN DOG'S STOMACH—PERFORATION OF ABDOMEN—RECOVERY.

By Chas. J. Humphrey, F.R.C.V.S.

An instance of what serious lesions may take place in an animal body without causing any very apparent constitutional disturbance came under my notice a short time since. On Monday, July 2nd., a large St. Bernard puppy, sixteen weeks old was brought for advice. The owner had noticed a small swelling on the left side, between the last two ribs. When walking there was a slight crouching of the hind legs—a position sometimes denoting abdominal pain in the dog, andclearly assumed to decrease the tension of the parieties of the belly. The advice given was to clip the hair off the swelling, and to use fomentations three times a day. A mild laxative was also given. Questions as to the history of the case only elicited the statement that the swelling was first seen on Friday, June 29th.—four days previously—and as it increased in size and had become painful, professional advice was deemed expedient. The fomentation was carried out as directed, and on Wednesday, July 4th. the swelling broke. On cleansing the wound something was observed in the centre of it, which the owner seized with his fingers and extracted.

The foreign body proved to be a cat's-meat skewer about five inches long, perfect and unbroken. On making enquiries of his servants, the owner was informed that one day in the preceding week the puppy had bolted his cat's-meat—skewer and all! Which day of the week was not certain but, to the best of their recollection, it was on the Tuesday.

The wound was kept clean and dressed with carbolised oil, the dog was fed on soaked Spratt's biscuits, healing went on rapidly, and now a complete recovery appears to have been made.

I am aware that the case is not unique, and that similar objects have passed through the stomach and abdominal walls. I think it is Youatt who relates a case of a two-pronged steel fork having been swallowed by a dog, and having been extracted in much the same way. The interest of this case seems to me to centre in the comparatively slight disturbance caused, and it illustrates how nature can rid itself of foreign agents directly and effectively.

A PROTRACTED CASE OF PURPURA.

By Frank H. Gibbings, M.R.C.V.S.,

I am induced to send you a few notes on the above case, not from the idea of advancing anything original but because I think it may be somewhat interesting to your readers.

On March 2nd. last, I was called to visit a cart-horse some two or three miles away who was stated by the messenger to be suffering from "a bit of a humour." On my arrival I carefully examined the horse and found him very much swollen in both hind legs, and showing much pain and other characteristic symptoms of what at first would appear to be a case of Lymphangitis; but on further enquiry I discovered that the horse had been off his feed for two or three days previously, and was coughing slightly.

This led me to doubt the presence of lymphangitis, and to suspect that the case would develope into one of Purpura, although no positive symptoms of that disease were then present, and thinking this I did not administer the usual dose of physic.

The temperature was 103½, and pulse 65, and the membranes of eyes and nose slightly injected.

I ordered continuous hot fomentations to the hind limbs, and the application of a cooling lotion, and ℥½ of chlorodyne three times a day to soothe the pain.

On my arrival the next day I found no marked change in the symptoms, so ordered the continuance of the treatment; but on the following day the symptoms were much more marked. There were sharply defined swellings in the regions of the head and neck, with petechial spots on the membranes. Temperature had risen to 105, and the horse was blowing rather heavily.

I discontinued the chlorodyne, and gave turpentine ℥i and chlorate of potash ℥ii, three times a day, continuing this treatment for two days.

On the 6th. I saw the horse again, and found the Purpuric symptoms much abated, the swellings having disappeared from the head and neck, and the membranes having become much clearer.

Altogether I thought the case was progressing very satisfactorily, but I noticed that he still seemed to suffer great pain in his hind limbs, so I ordered constant fomentation and a plentiful application of belladonna liniment, chlorodyne also being given internally.

On the 7th. I found him still in great pain, more particularly in the near hind limb, with a sponginess in the neighbourhood of the hock, as if an abscess were forming there, and as the animal was barely able to stand I decided to put him in slings, and this was done the same night.

On my visit next day I found that the abscess had broken on the outer, and upper part of the hock discharging a large amount of pus, accompanied by a slight discharge of synovia from the bursa.

The sponginess had extended all the way around the front of the hock, and I now discoverd a similar abscess forming near the fetlock joint of the off leg, which I ordered to be poulticed, and on its breaking, both abscesses were dressed with carbolic oil. Synovia was also escaping from the fetlock, and so great was the pain produced by these two open joints, that the animal could not bear any weight on either of his hind limbs, and so allowed himself to swing loose in the sling.

Chlorodyne and chlorate of Potash were given alternately every three hours.

On my visit on the 12th, I found the first abscess had considerably improved in appearance, but that there was evidence of the formation of a new one on the lower and inner part of the hock, and the leg had become so tumefied that the skin from a little above to below the hock had given way and was peeling off leaving a large raw surface exposed.

The other limb was *in statu quo*.

I ordered the same treatment to be continued, and saw the case again at the expiration of three days.

I now found that the hock of the off side had presented an abscess, and had broken, discharging pus and synovia.

I now substituted the application of cold water for that of hot, also dressing the wounds with Tincture of Benzoin and Myrrh, et Acid Boracic. The horse still showed great pain but the appetite had improved, and although the wounds were apparently so dangerous I had great hopes of his ultimate recovery.

I saw the horse at intervals of three days for a fortnight and the wounds had almost healed, when I had an urgent message early one morning to say that the slings had given way during the night, and that the horse had fallen and reopened the wounds.

On my arrival I found the facts as stated; the horse was put in slings again, and the same treatment continued. In about another fortnight with the application of Boracic Acid ointment, the wounds had entirely healed, and the skin had almost covered the denuded surface.

The horse was eventually let out of slings about April 30th, after having been in them six weeks.

He was then turned out to grass for a month, after which he was put to work having made a complete recovery.

EXTRACTS.

PLEURO-PNEUMONIA.

Report of the Departmental Committee.

As it is probable that some legislation on the lines of this report will take place, it is important that the opinions of the committee be made as public as possible.

The report commences with a reference to the history of the disease, from which we find that previously to 1885 pleuro-pneumonia had been steadily decreasing, but in that year and in 1886 and 1887 a considerable increase took place. This spread of the disease can be clearly traced to the movement of infected cattle through fairs, markets, and sale-yards, especially in Scotland. In England three districts, were, in 1887, the chief centres. 1.—The Metroplis and contiguous counties. 2.—Lancashire, Cumberland and the West Riding of Yorkshire. 3.—The County of Norfolk. In Scotland the disease was practically limited to the central counties of Lanark, Edinburgh, Fife, Forfar and Perth. The cause of this prevalence in particular districts is apparently traceable to either the existence of numbers of town dairies, or the importation of Irish cattle. This latter cause is specially noticed by the committee who say, "It is therefore plain to us that, if our efforts to stamp out the disease in the United Kingdom are to be successful, it is absolutely necessary to attack it at the fountain head, and, whilst crushing every new outbreak in the United Kingdom, to devote our strongest energies to exterminate the disease in Ireland."

Amongst the witnesses examined there was a remarkable agreement upon the following point:—

(*a*) That pleuro-pneumonia is an imported disease.
(*b*) That it is an incurable disease.
(*c*) That it is communicable by contact between living animals and through the medium of the respiratory organs only.

Very conflicting evidence was given as to the length of the period of incubation. Several witnesses contended that the disease developed itself within three months, whilst others maintained that it might remain dormant for a much longer time, some even stating that they had known cases of the development of the disease, no less a period than 15 months after infection. On which the committee say, "The evidence tends to show that the period of 56 days, referred to in the Contagious Diseases (Animals) Act, 1878, is quite untrustworthy and insufficient as a period of safety from infection." After stating the difficulty of detecting pleuro-pneumonia in the latent stage; the delay on the part of stockowners in report-its existence' and the not unfrequent deliberate concealment of disease, the committee point out how the existence of private slaughter-houses are powerful aids to the concealment of all forms of diseases of animals and recommend that public abattoirs should be erected and maintained under the supervision and inspection of the local authority.

The report next goes on to consider the three chief preventive methods of dealing with the disease—isolation—inoculation—slaughter.

ISOLATION.

The committee say, "Isolation and disinfection have undoubtedly considerable sanitary value. We find however, that slaughter of diseased animals combined with isolation of those in contact, has hitherto failed to eradicate the disease."

INOCULATION.

This section of the report commences with the remark, "A large portion of our inquiry has been devoted to a searching examination of inoculation." and then goes on to describe the method of performing the operation and to speak of its practice at home, and in the Colonies. We then read, "On a careful examination of the evidence given by the advocates of inoculation in this country, both lay and profesional, we cannot fail to be struck by certain prominent features which diminish considerably the value of that evidence,

1st.—We find a general ignorance as to the previous history of the animals operated upon, a point which is of great importance, in view of the long period during which the disease may lie dormant, and the possibility that the animal inoculated might be already diseased, though apparently healthy.

2nd.—In the dairies of London and Edinburgh where inoculation is largely practiced, the life of an animal is in general so short that it affords us no reliable knowledge as to the immunity from disease conferred by inoculation.

3rd.—But the point which above all others militates against our obtaining an accurate idea of the exact prophylactic value of inoculation, is the fact that it is not generally practised in this country, except in cases where an outbreak of pleuro-pneumonia has actually occurred.

The value of inoculation is expressed by the committee as follows:—"While we cannot deny that inoculation, in itself, is valuable, as a palliative and preventive method of treatment, it is impossible in this country, to employ this method under the only conditions that might render its operation successful. These conditions include:—

1.—Its performance by competent men specially appointed in all parts of the country.

2.—Its employment universally and compulsorily upon all cattle above three months old.

Concerning the evidence of the Colonial witnesses the report says, "it will be seen, on a perusal of the evidence, that they universally admitted that, were the conditions of stock-owning in the Colonies similar to those which prevail in England, they would unhesitatingly adopt compulsory slaughter as the surest and most economical means of exterminating the disease."

Further evidence of the inadequacy of inoculation to eradicate pleuro-pneumonia is furnished by the history of the disease in Holland. M. Lameris, one of the Government veterinary surgeons, residing at the Hague, gave evidence showing that the Dutch had tried slaughter of diseased animals, combined with compulsory inoculation of suspected ones, but failed to eradicate it. They then adopted the stamping out system, and were successful.

M. Lameris was very decided in his opinion that compulsory inoculation could not have cleared his country of disease; that stamping out was the safest and most certain way of attaining this result and proved in the long run, to be the cheapest.

SLAUGHTER.

The committee say, "The evidence before us abundantly proves that, when properly and thoroughly carried out, slaughter has always been successful in completely eradicating pleuro-pneumonia. Whilst rigorous slaughter is a necessary part of any system of stamping out, it is still to be regarded only as a part, and must be accompanied by a very strict supervision of fairs and markets, and the general movement of cattle throughout the country, and also by a more vigorous enforcement of the penalties for the concealment of disease."

In expressing their approval "of the policy now being carried out by the English and Irish Privy Councils." (the policy of slaughtering not only diseased cattle but also those exposed to the infection) the committee say, "we are convinced that, although from the peculiar and insidious nature of the disease, the result may not be immediate, still we cannot hope for the extermination of pleuro-pneumonia in this country, except by a vigorous persistence in this policy.

ON LANOLIN.

By Oscar Liebreich, M.D.,
Professor of Materia Medica in the University of Berlin.

Lanolin is a cholesterine fat which differs from the ordinary fat of the *panniculus adiposus* through its containing, instead of glycerine, the brilliant crystals of cholesterine, which are so well known to every microscopist.

Besides cholesterine, these fats contain other substances which are similar to cholesterine, but which have nothing in common with glycerine. In order to give you an idea of the differences which exist between these two sorts of fat, I may mention that cholesterine fats are not decomposed by boiling with alkaline solutions: that is to say, they do not form soap; while on the other hand, glycerine fats are easily split into soap and glycerine when treated in the same way. The decomposition of glycerine fats into fatty acids and cholesterine or cholesterine-like substances, can only be produced by the action of a strong solution of alkali in alcohol. We have, therefore, to deal with a very stable chemical compound.

Lanolin can be extracted from the fat contained in the wool of sheep; this fat, when unpurified, is called wool oil. It has been known for a very long time among the agricultural and cattle-breeding populations, and its old designation was œsypus.

I could not, without taking too much of your time, give you the history of this œsypus. I shall simply tell you that œsypus was already used in the time of Herodotus. Dioscorides describes the preparation of œsypus from wool, and his description is reproduced in most of the pharmacopœias published up to the eighteenth century. It was also used by the ancients as a cosmetic, and Ovid mentions it in his "Ars Amatoria." The Roman ladies anointed their faces and skin with œsypus brought from Athens, and this in spite of its repulsive nature. Lanolin continued to be employed during the middle ages, as Mr. Milton has pointed out to me; he has found the œsypus mentioned in the Sloane edition of *Hieronymus Frascatorius*.

My researches have led me to believe that it is always present wherever keratinous tissue is formed. As to the origin of this cholesterine fat, it may be asked whether it is secreted by glands, or formed simultaneously with the keratinous tissue. I can answer that the horny tissues are full of Lanolin, even where there are no glands to produce it. The degree of brilliancy and elasticity of the horny tissue is in direct proportion to the amount of Lanolin contained in it.

I have shown that Lanolin can be rubbed into the skin with great ease. When this rubbing is repeated several times, the skin becomes distinctly softer. This application of Lanolin to the skin has been found very useful for massage by Dr. Ewer. It is a great advantage that Lanolin does not require to be removed with soap and water after massage. I may mention, also, that the easy penetration of the skin by Lanolin explans the good results obtained with in in seborrhœa sicca.

I wish now to make a few observations concerning the absorption of drugs through the skin. It must not be supposed that a substance applied to the skin, even in combination with Lanolin, can be absorbed as quickly as through the intestines.

I must now explain shortly, why absorption through the skin is slow. The superficial layer is the stratum corneum; then comes the stratum lucidum; then the granular layer, in which Lanolin is probably formed; then the deep cells of the epidermis; and, at last, the papilla, with one vascular loop. When fat is rubbed into the skin, it finds only this one loop through which it can be absorbed; in the intestine, on the contrary, every villus contains numerous blood-vessels; hence the great difference in the power and rapidity of absorption.

It has been objected to me that Lanolin, which was known to the ancients, and used for centuries, would not have been abandoned if it had been really useful. To this I answer that what they used was œsypus, that is to say, impure wool oil, which has many disadvantages and dangers.

In Lanolin, I introduce to you a substance which, like many others, is old as history in its primitive forms—new as our most modern research in its derivative form. To transform the old, to apply to it the alchemy of science, to purify it, and to utilise it for our benefit—this is our aim. This has been my labour.

A new fatty substance, neutral, miscible with water, highly absorbable by the skin, is a desideratum. Such is Lanolin.—*British Medical Journal.*

THE OUTBREAK OF RABIES AMONG DEER IN RICHMOND PARK.

Richmond Park is one of the Royal parks, it is 2,300 acres in extent, and is surrounded by fences or walls. There are five carriage entrances into the park, and about 1,200 deer are usually kept there, besides a certain number of grazing cattle. Most of the deer are of the kind known as fallow deer, but in a remote part of the park there are a few of the larger kind known as red deer. The park is open to the public at all times of the day, but the gates are closed in the evening. It would therefore be easy for a dog to enter the park at any time during the day, and, if fleet enough, bite a certain number of deer, and make its exit without beiug seen.

It should here be stated that it is the habit of the deer to separate into herds of about one or two hundred; further, that these herds rarely leave the part of the park in which they are accustomed to pasture, and it is a noticeable fact that the animals of these respective herds rarely intermix. This habit of segregation on their part will account for the disease being confined to the infected herds, as will hereafter be seen.

The first intimation of the existence of any disease among the deer was the discovery by the keepers, towards the end of September 1886, of a doe, which was suckling a fawn, staggering about in the herd pasturing near the entrance gate at East Sheen. The animal was killed, and it was then found that the hair was rubbed off the head, giving it the appearance described in the accounts of the outbreaks at the Grove in 1795, at Swythamley, and at Eaton Park. (It is stated that when a doe has a fawn she will attack a dog, and under these circumstances it is quite possible that this and other does in the herd may have been bitten by a stray rabid dog.)

Some days after the death of this doe, the keepers noticed others of the deer in the same herd behaving in a very erratic manner. At first they were constantly rubbing their heads against the stems of trees or on posts, and with such force that their hair was in some cases entirely removed. They were frequently seen to be biting the skin about their shouldiers and bellies until they were perfectly raw, tearing out their hair, and at times they charged at the other deer.

As a rule the animals appeared to feed up to the time of their death, and when the keepers opened them they found within the stomachs pieces of stick, and other things which they would have ordinarily refused for food. All the animals were represented as showing the same symptoms, some being very violent before dying, and they usually died within two or three days of being first observed to be unwell.

It was at first thought that the animals had died from eating some poisonous food. The contents of the stomachs were analysed on the suggestion of Mr. Lupton, the Veterinary Inspector of the Local Authority, but no poisonous food or substance could be found therein. The pastures were also searched for poisonous plants, but without success. The disease spread slowly through the herd, the animals dying at the rate of four a week; and by April 1887. 160 had died, all presenting decided symptoms of some form of nervous disease, which in many instances ended in paralysis, and always in the death of the animal.

At this period Mr. Lupton suggested that the attention of this Department should be called to the outbreak, and on visiting the park on April 17th it was found, first, that the disease had up to that time been entirely confined to the herd grazing nearest to the East Sheen gate; and, secondly, that, although the herd had been removed from their former pasture, and had been enclosed in another part of the park, where their mode of feeding had been entirely changed, the animals continued to die at about the same rate and with the same symptoms. From this fact it was concluded the disease had not originated in the feeding of the animals, and they presented several of the symptoms which are described in the outbreaks previously referred to. One of the earliest indications of their being affected was that of throwing the head back and sniffing the air, as described in the Eaton Hall outbreak. After a few moments they would start at a gallop, as though they had been suddenly alarmed, and they as suddenly stopped and again commenced to graze.

It being impossible to devote sufficient time in the park to study the symptoms and nature of the disease, a buck and a fawn were forwarded to the Royal Veterinary College; the fawn, however, died four

hours after admission. A post-mortem examination was made of this animal. The first stomach was found to contain a fair amount of the usual food; mixed with it was a considerable quantity of hair. The vessels of the brain appeared to be somewhat congested. The medulla of this animal was taken to the Brown Institution, where, under the direction of Professor Horsley, rabbits were inoculated, which died of rabies.

The buck became so wild and violent that the persons in charge were unable to enter the loose box in which it was placed. This animal died two days after its arrival, and other rabbits were inoculated with portions of its spinal cord, with the same results as in the former case.

These animals, usually so timid, would rush at any person looking at them, and bite at a broom or a stick if put throngh the bars of the door.

Although the inoculation of the rabbits resulted in their death from paralytic rabies, it appeared to be desirable to inoculate a dog to see if true rabies could be produced in that animal. Accordingly on May 26, a dog was inoculated with part of the spinal cord of another affected deer which had been sent up from Richmond Park. Eleven days after the inoculation, *i.e.*, June 6, the dog presented symptoms of rabies, and died on June 12th; the autopsy was conducted by Professor Horsley, who found all the characteristic lesions of rabies present.

It having now become certain that the disease among the deer in Richmond Park was true rabies, it was considered desirable to stamp out the disease as soon as possible. The animals were still confined to the enclosure in which they had been placed, and it was considered expedient to forthwith shoot any animal presenting the least indications of the disease. This was accordingly carried out.

The next feature in connection with this outbreak was the appearance of the disease in the month of June in the herd which had been grazing in the park next to the infected herd. As soon as the disease was detected in this second herd the whole of the animals were driven into an enclosure and this time divided into small lots. The animals in this herd suffered in a larger proportion than the previous herd, and the disease continued with more or less virulence until September 24th, by which time 257 animals had succumbed to the disease. Since that date no further cases have been reported.

There are some points, however, in connexion with this outbreak which are worthy of consideration, and this being the first occasion in which rabies has been identified with deer, a description of the symptoms of the disease will not be devoid of interest.

The earliest symptom observed in most cases was that of throwing their heads back on the shoulders and keeping their noses pointed to the sky; the animals were then seen to make sudden starts and gallop right away from the rest of the herd.

Next they began to rush at other deer, also at posts, rails, trees, or other fixed objects. When rushing at the latter they bruised their heads between the horns and rubbed off the hair in patches. This may be looked upon as a prominent sign in the early stages of the disease.

Subsequently, instead of being timid, they became unusually bold, charging at other deer, and causing the greatest alarm in the herd and if kept in close confinement they would rush at persons or objects brought in their way. At times a fawn might be seen to pursue and bite at old deer in a manner quite unnatural.

After a few days' illness the animals invariably died, some presenting violent paroxysms, while in other instances paralysis of the limbs became most marked before death.

Further, it is now clearly established that rabies can be transmitted from herbivora to herbivora by the ordinary means of infection, viz., the saliva.

As a means of testing whether the disease could be communicated by a bite, a rabid doe was placed in a shed with a healthy buck, which had been previously entirely isolated from the infected herds. Immediately the rabid doe was placed with the other animal she flew at it like a dog, and bit it about the ears and neck; the healthy deer was carefully watched, and on the morning of the 19th day it showed symptoms of disease, it became furious, and died in a very short time. This experiment conclusively proves that rabies can be conveyed by the bite of the rabid herbivora to another animal, and was a means of transmitting the infection in this outbreak; the absence of upper incisors in these animals must have rendered this method of inoculation very uncertain in its results, and no doubt accounts for the slow progress of the disease among the herd, a circumstance which throughout constituted the most peculiar feature in this outbreak.

Finally, in reference to the progress of the disease in these herds, it is interesting to note that the greater mortality in the early part of the outbreak was among the does and fawns; this is accounted for by the bucks protecting themselves with their horns from the attacks of the rabid does. Simultaneously with the shedding of their horns, the mortality increased among the bucks, and during the time the horns of the bucks were in velvet this continued.—*Report of the Agricultural Department for* 1887.

REGISTRATION OF ARMY HORSES.

Among many other schemes suggested two years since by the War Department to facilitate the rapid mobilisation of one or two Army Corps in time of need, none found more favour with military experts than the proposal made with regard to army horses by Major-General F. G. Ravenhill, R.A., in a lecture which he delivered at the Royal Service Institution on June 4, 1886. General Ravenhill began by saying that in this country we have regiments, batteries, and troops belonging to the 1st Army Corps, with their establishments kept up "to a certain extent"—four ominous words—in a matured state of preparation for active service. Secondly, we have the troops and batteries belonging to the second Army Corps, for which certain defined establishments on a limited scale are laid down. As regards any reserve of horses there

was absolutely no provision, and no organisation for procuring them; for, though an impress of carriages and horses was sanctioned for the transport of baggage by the Army Act of 1881, no machinery existed for its application. The consequence was that when a sudden demand for horses set in, the War Department was at its wits' end to find animals suitable for army purposes, and any supplies that could be picked up had to be accepted. To complete the Ammunition, Engineer, Ambulance, and Transport trains of one Army Corps we need at this moment at least 8,000 seasoned horses beyond those which we have at present on the establishment. To meet the requirements of two Army Corps, which, according to a popular theory, are actually ready within a fortnight for the field, it is essential that at least 18,000 seasoned horses should be immediately available, together with 2,000 more for the maintenance of lines of communication. Of these 20,000 horses, a considerable proportion would be required for riding purposes—animals which it is always more difficult to find than beasts of burden.

To meet these difficulties and to avoid a useless waste of money in peace time, the War Department have, at General Ravenhill's suggestion, invited the owners of large quantities of horses to place voluntarily a certain number at the disposal of Government in case of need, receiving in exchange a retaining fee of 10/- per horse annually, it being left to the owner to name the price he would require for each horse taken by the Government. This price would naturally embrace the estimated cost of getting a green or raw horse into condition, and would include the possible loss which the owner might suffer through the temporary suspension of any trade or traffic in which he might be engaged, not forgetting that the cost of green horses would be enhanced in time of war by the large Governmental demand for seasoned animals.

Particulars of the conditions offered by the War Department to owners of horses have now been in circulation for some months, and we have much pleasure in stating that hitherto the results have been most satisfactory. Much to the credit of the large railway companies, the overtures of the War Department have met with a ready response. In addition to the great railway companies, some of the provincial tram companies and carriers, together with such metropolitan firms as Messrs. Carter, Paterson, Messrs. Reid, Messrs. W. & A. Gilbey, Messrs. Schoolbred, Whiteley, Maple, Marshall and Snelgrove, Swan and Edgar, Christmas and Lovell, and Hudson Brothers have patriotically come forward to help the Government in its scheme of national defence.

It has thus been demonstrated that by a simple and easy process of organisation it is possible for the War Department to lay its hands on a number of serviceable horses, sufficient to place an Army Corps in the field within a few days of the order being given for mobilisation. The result speaks highly for the patriotism and public spirit of the railway, trading, and carrying companies in this country, and if the Government are wise enough "to strike while the iron is hot," and to secure the passing of a Supplementary Vote of £5,500, in addition to the £3,500 already granted, it will be easy for them to secure on the same terms the other 12,000 horses needed to complete the equipment of two Army Corps.—*The Daily News.*

THE "EGYPTIAN" ARGUMENT.

As regards the great doctrine of Organic Evolution we are apt to fall into two mistakes. The first is, to suppose that the antagonist hypothesis of plants and animals having been at some time specially or mechanically created, each as we now see it, is of very remote antiquity. Far from it: the philosophers, the naturalists, and the divines of antiquity and of the middle ages gave it no countenance. The Talmud contains Evolutionist utterances. Bacon and St. Thomas Aquinas alike withold their sanction from the "mud-pie theory of life," as Professor Le Conte happily expresses it. In short, what is sometimes known as the "Old Natural History" dates no further back than the seventeenth century, and is, perhaps, mainly due to John Milton and John Ray.

The second mistake is that of believing that no further discussion on the origin of species is necessary. It is perfectly true that, in the opinion of the best qualified judges, Evolution is "victorious all along the line." But, not to speak of writers and orators who have not had the necessary biological training, there are, especially in France, still certain "survivals," whose prejudices will not allow them to judge impartially, and who think that what Cuvier and his followers said, and what the Academy of Science accepted as truth, must never be called in question. These "survivals" from time to time bring forward afresh the old, refuted fallacies in a new form. Literary or political papers, thinking that a member of the Academy cannot be wrong, insert abridged extracts from their books, and so the general public is deceived.

In a work of this kind which has lately appeared we find a repetition of one of the most plausible, but most fallacious arguments in support of the permanence and the immutability of animal and vegetable species.

Everyone knows that when the first Napoleon undertook his expedition to Egypt he took with him a number of learned men, who were to study the country, its monuments, and its products from every conceivable point of view. Among their results was a series of observations of the birds and mammals sculptured on the most ancient monuments or actually preserved in the state of mummies. These images and remains were compared by Flourens with their living representatives as existing in our own days; a very close resemblance, or perhaps even a complete identity, was recognised and proclaimed. The sacred ibis of our century might have served for the original of the reliefs of his ancestors, carved out perhaps three, possibly four or five thousand years ago. Hence the inference was drawn by Cuvier and his disciples, and formally accepted

by the official school of French biologists, among whom it survives to this day.

But this contention involves certain assumptions which are no part of the Evolutionist views. No follower of Darwin, of Lamarck, of Huxley, or of Haeckel has ever asserted that the modification of species constantly proceeds at all times, in all climates, in all forms of living beings, and at a uniform rate. The Cuvierians impute this erroneous belief to Evolutionists. They take for granted that because a certain phenomenon cannot be shown to have happened in one given locality, and within certain limits of time, it can never have happened at all. They assume that the lapse of three or even five thousand years gives scope to decide the question. They forget that in Egypt the climate and other outward circumstances have undergone no appreciable change within historical ages, and that there has thus been no inducement for modifications in the animals.

These considerations entitle us surely to dismiss the "Egyptian argument" as inconclusive. But there is an additional point, not as yet sufficiently noticed, which reduces the argument to a complete absurdity. If we make a careful examination of the oldest existing monuments we find there portrayed men of different races; or, if the term is preferred, varieties possessing the very same distinctive features which we observe in their descendants in our times. The negro is depicted as we find him to-day, the interval of 4,000 or 5,000 years having failed to modify his structural characteristics.

If, therefore, fixity of type for a few thousand years proves that certain animal species—say the sheep and the goat respectively, or the horse and the ass—are immutable and primordially distinct, surely the same conclusion must be extended to the races of mankind, and, *e.g.*, the Negro, the Arab, and the Jew must have had each a distinct and independent origin. The Cuvier-Flourens argument, if it proves anything, proves too much!

Similar observations may be made on varieties, strains, or breeds of domestic animals. The ram depicted on the old Egyptian monuments is identical with the ram of modern Nubia, and is neither more or less unlike other breeds of domestic sheep. Or, if we turn to a very different climate, we find that the small horse of the Lithuanian peasantry is the same whose skeleton is found in ancient tumuli and bone-heaps.

The Cuvierians are therefore in this dilemma: either they must own that the Egyptian argument is utterly null and void, or they must admit that it proves the absolute distinctness and fixity of races, varieties and breeds. But this latter alternative is fatal to them since they hold that there is an utter distinction between races and species, the former being mutable and the latter immutable. They regard the Negro as of one species with the European, and as descended from the same first parents. Yet if 5,000 years have failed either to approximate him to the white man, or to take him to a greater relative distance, with what show of consistency can they expect that 5,000 years should perceptibly modify the relations between species? Yet with such arguments a Blanchard can seek to defend the decaying doctrine of mechanical creation!—*Scientific News.*

NOTES AND NEWS.

Midland Counties Veterinary Medical Association.

The Midland Counties Veterinary Medical Association hold their next meeting at Derby, on August 17th., at 2.30. The subject for discussion is a paper "On Surgical Horse-Shoeing." The day's proceedings include dinner at 5.30.

Export and Import of Horses.

During the six months ended June 30th, there were exported 5,248 horses, valued at £315,822, against 3,610, valued at £198,030, in the same period of 1887. Of these 1,061 were stallions, of which 14 went to Holland, 46 to Belgium, 21 to France, 433 to United States, 300 to British North America, and 247 to other countries. Of the 2,283 mares, 322 went to Holland, 365 to Belgium, 305 to France, 476 to the United States, 137 to British North America, and 678 to other countries. There were 1,904 geldings, of which 442 went to Holland, 613 to Belgium, 401 to France, 117 to the United States, 1 to British North America, and 330 to other countries. There were 5,479 horses imported, against 3,321 in the same period of 1887. The value of those imported in 1888 was £105,885, and in 1887, £85,617. Of the imported horses, 316 were stallions, 685 mares, and 4,478 geldings (the last term including all animals, the gender of which was not particularised previous to April, 1888).

Chronic Glanders in Man.

A Russian medical paper, the *Medizinskoye Obosrenie*, states that a young soldier, who had been a waggoner before his admission into the army, was received into the military hospital suffering from two foul ulcers on the hard palate, which had perforated the nasal fossæ and destroyed the inferior turbinated bones. Three weeks later a swelling appeared over the left eyebrow, a fortnight afterwards he complained of pain on the inner side of the left knee around the internal tuberosity of the tibia. Then purulent discharge occurred in the left ear, and an abscess on the back of the right hand, which appeared as a deep purple tubercle, with a hard circumference and sunken towards the centre; purulent discharge oozed from its surface. At first, for a short time after admission, the temperature varied, rising of an evening to 103° or 104°; later on it fell to normal. The disease was mistaken for syphilis, and iodide of potassium was given without the least benefit. About ten weeks after admission he was in better health and left hospital, receiving his discharge from the army. Within a few weeks he returned with extension of the ulceration of the hard palate; the uvula was destroyed. The characteristic tubercles, the "farcy bud," appeared in the face, the metastatic abscess on the back of the hand remained. The patient ultimately died of exhaustion. Before death some of the tubercles were extirpated; they were found to contain micro-organisms resembling the glanders bacillus of Löffler and Shütz.

One Cause of Bad Milk.

It appears that Professor Law, of Cornell University, recently made some experiments in this direction. He caused some cows to drink for several days from a stagnant pool of water, and, having examined the milk, found it full of living organisms. The water from the pool was then examined, and the same living creatures were found. The cows, on examination, were found to be in a feverish condition, the result of their blood being charged with these minute organisms. Then some pure milk was taken and some of this pond water put with it, and these same creatures multiplied within a few hours so as to take possession of the milk. The inference from this is that living organisms may be introduced into milk by the use of improper food and drink.

The Phenomena of Zymotic Disease.

The opinion is now gaining ground that the so-called "disease-germs" do not occasion fevers, etc., by their own mere presence in the blood, but by certain definite chemical compounds which they produce. These bodies ultimately prove fatal to the germs themselves—a phenomenon by no means unexampled. This view likewise explains why any animal, which has once recovered from such a disease is generally, for a term of years at least, proof against a second attack. It is even suggested by MM. Chantemesse and Vidal, that the peculiar compounds elaborated by such microbia may be isolated, if not perhaps artificially manufactured, and may serve to render man refractory to the attacks of disease-germs. *Journal des Debats.*

A Plague of Nails.

One of the most common injuries from which horses suffer is caused by their treading on nails in the streets. Very serious consequences follow this accident—fistulous wounds, requiring weeks of rest, and sometimes even death. In recent years one kind of nail has, in large stables, obtained quite an unenviable notoriety for the frequency with which it is found partially imbedded in the horse's hoof on his return from work. Patriots and fair-traders will be glad to hear that this is a French nail. It is the nail used in the packing-cases containing various objects sold in retail shops, and its distribution over the streets is due to the habit of breaking open these cases on the pavement. Very much animal suffering and not a little loss of horse-flesh would be saved by more thoughtful care in disposing of old wood in which nails are left. Shop-rubbish too is a source from which nails fall into the road-way, especially when removed in over-loaded dust carts—the track of which is often marked by a long broken line of scattered debris, nails included.

Prevention is better than cure, and a little more consideration would lessen this dangerous nuisance, even if police regulations cannot take cognizance of flagrant obstructions on the pavement and in the roadway. What with loose nails, iron hoops, bicycles and perambulators, driving your own horse in London is becoming an anxious task.

The Poison of Bees.

According to some investigations which Professor Carlet, of the Faculty of Sciences of Poitiers, has recently communicated to the Academy of Sciences at Paris, the poison-apparatus of bees comprises two quite distint sets of glands, some yielding an alkaline secretion and others an acid product. For the full efficiency of the venom a mixture of the two liquids is required. The alkaline glands, which are highly developed in the bees and in all other Hymenoptera with are barbed sting, are merely rudimentary in insects of the same orders which use their stings not for defence against their enemies, but for paralysing a victim destined for the food of the larvæ. (If a bee is caused to sting into a piece of blue litmus paper, a red spot is produced, showing that the acid is in excess. The sting of a wasp, on the contrary, as it was first pointed out by Professor Church, and as we have since confirmed, has an alkaline reaction. It is very probable that all the animal venoms are of a complex nature. There is evidently room for further research, which we recommend to persons in districts where the hornet is plentiful.—*Scientific News.*

Diphtheria Spread by Cats.

Domestic animals have often been found guilty of spreading infection. In his report on diphtheria in Enfield, Dr. Bruce Low, states that during the continuance of the epidemic, cats were observed to suffer in considerable numbers from illness; and in December, 1887, and January, 1888, there were many died. Some households, seeing their cats ill, destroyed them. Though there were known cases of diphtheria occuring in the practice of the veterinary surgeons at Enfield, yet they saw many cases of "influenza" at this time among the animals. The following is an illustration of the possible connection between diphtheria in children and in cats. A little boy was taken ill with what turned out ultimately to be fatal diphtheria. On the first day of his illness he was sick, and the cat licked the vomit on the floor. In a few days (the child meanwhile having died) the animal was noticed to be ill, and her sufferings being so similar to those of the dead boy, the owner destroyed her. During the early part of its illness this cat had been let out at nights as usual. A few days later the cat of a neighbour was noticed to be ill. It had also been out in the backyards at night. The second animal which however recovered, was the pet and playfellow of four little girls, who nursed it with great care. All four girls developed diphtheria, their mother being convinced that they got it from the cat; and indeed no other known source of contact with infection could be discovered. It is easy to imagine cats catching an infectious illness like diphtheria, when we remember how often milk and other unused food from the sick-room is given to them. It is a frequent occurence too, to see children carrying cats in their arms, and even kissing them. It is obvious, therefore, that if the cat were ill with diphtheria, the children under such circumstance would almost inevitably contract the disease.

A New Parasite in American Sheep.

According to Dr. Cooper Curtice over 87 per cent. of the sheep examined in Colorado, in 1887, were infected by a tapeworm, apparently indigenous to that region. The parasite is said to be the same as infects Brazilian deer, and it is the first acquisition of a native parasite by the sheep on that continent. These tænia occur in the duodenum and gall-ducts of Western sheep and lambs, and were found from May to January. Both young and adult are associated, and sometimes in immense numbers. Observations show that this tænia cannot mature in less than six to ten months, so that lambs would not be capable of infecting other lambs until they had become yearlings. The disease caused by this parasite makes its appearance gradually, and increases as the parasites grow. The actual loss by death, as Dr. Curtice points out, is probably the least part of the evil. That occasioned by the diminution of fat, muscle, and wool, which, though small for each animal, is constantly present from year to year, forms the larger, and aggregates a total loss to the sheep husbandry of the plains probably in excess of that due to the scab insect. Its present distribution is said to be from Oregon and Wyoming, southwards; and from Nebraska and Kansas, westward.

Blue Milk.

The "blue milk" in question is not that well-known fluid retailed by some milkmen, and owing its heavenly tint to a careful removal of the cream and a liberal addition of water. The *Gazette Agricole* describes a morbid change which sometimes occurs in unadulterated milk under conditions not fully determined. Such milks display sometimes a yellow colour, sometimes a red, but most frequently a blue, owing apparently to the presence of a multitude of living beings. When first drawn the milk has nothing peculiar in its appearance. But after exposure to the air for about twelve hours there appear round blue spots of different sizes which gradually extend. The blue colouration of milk sometimes becomes a very serious evil, not confined to single farms, but extending over entire districts, as it has been observed in Normandy, Artois, Holstein, and elsewhere. This affection is most common from the beginning of summer to the end of autumn. Such milk is not merely disgusting, but actually injurious, especially to children.

The causes which foster the appearance of this mould in milk are not fully known. Phthisical cows, ill-cared for and fed on spoiled food, are more liable to this alteration in their milk than such as are healthy and well treated.

The dirtiness of cowhouses, dairies, and milkpails further promote the infection. It is certain that if the blueness of milk is due to a fungus all these conditions must aid in its multiplication. However, it appears to be demonstrated that "blue milk" is closely connected with a diseased state of the cow.

It is probable, though not fully established, that it is a cryptogamic infection of the udder.—*Scientific News.*

Horses without Food.

The following appears in a letter from Mr. A. Entwhistle in last week's *Live Stock Journal.*—

On the 19th April last, there was an explosion at the St. Helen's Colliery, near Workington, Cumberland. At the time this occurred there were nineteen ponies in the pit. Twelve of them were subsequently found dead, and seven—Prince, Fox, Dick, Sandy, Doctor, Charley and Buck—alive. They were last fed in the afternoon of the 19th April, and on the 30th April—eleven days afterwards—were found by the exploring party still alive, no one in the meantime having been down the shaft.

Buck somehow or other got loose, and away from his companions, and wandered into another part of the workings, and was never expected to be found alive, but on the 4th May, when the search was being continued for some of the men, thirty-two of whom were killed by the explosion, he was discovered, having fallen down a hole, about six feet deep. He was, of course, naturally weak and exhausted, but, with a little attention, he was soon in his usual good form, and, along with the other horses, he is working in the ordinary way; in fact, the whole of the seven horses are in capital condition, and apparently no worse for their long fasting.

Anti-Rabic Hospitals.

According to *Cosmos* there now exist in the world twenty-three establishments for the preventive treatment of hydrophobia on the principle of Pasteur, and all conducted by his pupils.

Our Executive Body.

The governing body of the profession consists of—

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The names printed in italics are also examiners, Professor Brown having just been added to the examining board for the Fellowship.

The president and vice-presidents are elected by the council. The council is elected by the profession—so that body only can be called directly representative.

STUDENTS' COLUMN.

STUDENT'S BOOKS.

"A Scotch Student" writes:

"May I ask you to give us a list of the best books for the use of veterinary students. I find the text books used at each school are different, and should be glad if you or some of your correspondents would suggest a good selection; arranged according to the different classes—say, for 1st, 2nd and 3rd year men.

The questions in our issue of July 28th, were answered best by Mr. McLaren who however is disqualified, having been more than two sessions at college. The next best answers were from Mr. E. P. Edwards and Mr. T. H. Haines, between whom so little difference existed, that we have equally divided the prizes.

The answer to questions in July 4th number will be adjudicated on next week.

The delay is due to the large number of answers received.

A Prize of 5s. will be given for the best written answer to each of the following questions:—

Questions

1.—What are the advantages and dis-advantages of bran as a food for sick and convalescent horses.

2.—How do you administer a draught to a horse. Under what circumsrances is it dangerous to the patient, and under what is it impossible.

No competitor must have been more than two sessions at College. Answers must reach us not later than Wednesday morning. The competitions are open only to veterinary pupils and students. Each answer must be signed in full with name and address. If a pupil, state who with; if a student, state at what College. We trust to men's honor not to receive any help in preparing their answers.

CORRESPONDENCE.

Original articles and reports should be written on one side only of the paper, and authenticated by the names and addresses of the writers, not necessarily for publication.

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers, containing facts of interest.

PATHOLOGICAL EXAMINATIONS.

Sir,

Let me congratulate you upon your announcement of last week, that practitioners can for a trifling fee of 5s. have trustworthy microscopical work done for them.

I only regret such an institution was not in force a few weeks ago, when I was much puzzled about the real significance of a nasal discharge, I should have been glad to have made use of the facilities you now offer. I hope soon however to claim your assistance in deciding the pathology of some tumours.

I feel sure those practitioners who like myself take an interest in the science of our calling, but who are unable to carry out laboratory investigations, will be thankful to you for the facilities you offer.

Yours truly,

A Subscriber.

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